

THE FOLLOWING IS THE ENGLISH TRANSLATION OF THE
AMENDMENTS TO THE INTERNATIONAL PRELIMINARY
EXAMINATION UNDER ARTICLE 34:
Amended Sheets (pages 4, 19)

bactericidal ultraviolet lamp and the photocatalytic effect of the titanium dioxide can be achieved in the same wavelength range.

Moreover, it is an object of the present invention to provide a thin film photocatalyst the wavelength adsorption peak of which is the bactericidal ultraviolet wavelength by forming an anatase titanium dioxide photocatalyst as a thin film having a specific crystal structure.

The present invention consists of the following technical means for solving these problems.

(1) A transparent thin film titanium dioxide photocatalyst, characterized in that the crystal size of the titanium dioxide catalyst forming the thin film is 5 nm to 50 nm, the crystal form of the titanium dioxide is in the state of containing spindle-shaped crystals, the adsorption wavelength peak is in the range of 200 nm to 300 nm and the film thickness is 0.1 to 1.0 microns.

(2) The photocatalyst according to (1) above, wherein the crystal form of the titanium dioxide forming the thin film is a mixed state of spindle-shaped crystals and cubic-shaped crystals.

(3) The photocatalyst according to (2) above, wherein the aforementioned crystals are dispersed in water or alcohol at a compounding ratio of 4:11.

(4) A filter, wherein the photocatalyst according to any of (1) through (3) above having an adsorption wavelength peak in the range of 200 nm to 300 nm is coated on the surface of a substrate.

What Is Claimed Is:

1. A transparent thin film titanium dioxide photocatalyst, characterized in that the crystal size of the titanium dioxide catalyst forming the thin film is 5 nm to 50 nm, the crystal form of the titanium dioxide is in the state of containing spindle-shaped crystals, the adsorption wavelength peak is in the range of 200 nm to 300 nm and the film thickness is 0.1 to 1.0 microns.

2. The photocatalyst according to Claim 1, wherein the crystal form of the titanium dioxide forming the thin film is a mixed state of spindle-shaped crystals and cubic-shaped crystals.

3. The photocatalyst according to Claim 2, wherein said crystals are dispersed in water or alcohol at a compounding ratio of 4:11.

4. A filter, wherein the photocatalyst according to any of Claims 1 through 3 having an adsorption wavelength peak in the range of 200 nm to 300 nm is coated on the surface of a substrate.

5. The filter according to Claim 4, wherein inorganic paper having silicon carbide (SiC) or amorphous silica (SiO₂) as a principal component or inorganic paper having activated charcoal, zeolite or sepiolite as a principal component is used as the substrate.

6. The filter according to Claim 4, wherein a photocatalyst with an adsorption wavelength peak in the range of 200 nm to 300 nm is thin-film coated on the surface of a filter the substrate of which is molded in corrugated